What is claimed is:

1. A method for connecting a first unit to an ad hoc network comprising at least two units having different roles, the method **characterized by** the steps of:
- the first unit establishing contact with at least one of the units of the ad hoc network
5 and said at least one unit, in the establishment of contact, sending information to the first unit, the information including an indication of the role of said at least one unit in the ad hoc network, and
- the first unit thereafter, based on said information, connecting to said at least one unit, the first unit thereby becoming connected to the ad hoc network.

10 2. A method according to claim 1, **characterized in** that in the step of establishing contact, the information includes operational information of itself and/or other units in the ad hoc network, the operational information being related to operation of the units as connected in the ad hoc network.

3. A method according to claim 1 in the case where the units are adapted to
15 communicate with other according to the Bluetooth specification and the ad hoc network comprises at least one piconet formed according to the Bluetooth specification, the roles of the units in the ad hod network comprising master and slave, **characterized in** that in the step of the establishing contact, the first unit sends at least one INQUIRY message and said at least one unit responds by sending an INQUIRY RESPONSE message
20 comprising a Frequency Hop Synchronisation packet, the FHS packet including information of the status of said at least one unit in the at least one piconet.

4. A method according to claim 3, **characterized in** that in the step of sending the INQUIRY RESPONSE message, said information included the FHS packet indicates whether said at least one unit is a master of the at least one piconet.

5. A method according to claim 3, characterised in that the FHS packet further includes information as to whether the responding unit is a slave unit in at least one of said at least one piconet.

6. A method according to claim 3, characterised in that the FHS packet further includes information as to at least one of the following:
30 whether the responding unit is connected to at least one of said at least one piconet, whether the responding unit is a slave in at least one of said at least one piconet, whether the responding unit prefers to be a master or a slave after a subsequent PAGE procedure, the number of slaves in at least one of said at least one piconet, the BD_ADDR(s) of at least one master unit of said at least one piconet where the responding unit is a slave
35 member, the clock value(s) of at least one master unit of said at least one piconet where the responding unit is a slave member, inter-piconet scheduling parameters of at least one unit that is connected to at least two piconets, the battery status of the responding unit, traffic parameters in at least one of the piconets or priority parameters.

7. A method according to claim 3, characterised in that the information is encoded
40 using at least one of two undefined bits in the FHS packet.

8. A method according to claim 7, characterised in that one of said at least two undefined bits encodes whether the responding unit is a master of a piconet.

9. A method according to claim 7, characterised in that one of said at least two undefined bits encodes whether the responding unit is a slave in at least one piconet.

10. A method according to claim 3, characterised in that the information is encoded using the class of device field in the FHS packet.

11. A method according to claim 3, characterised in that the information is encoded using the AM_ADDR field in the FHS packet.

12. A method according to claim 11, characterised in that the AM_ADDR field is used to encode whether the responding unit when subsequently paged, will want to connect to the paging unit as a slave or a master.

13. A method according to claim 3, characterised in that the information is encoded using a combination of the undefined bits, the class of device field and the AM_ADDR field in the FHS packet.

14. A method according to claim 13, characterised in that the AM_ADDR is used to encode the number of active slave units in the piconet for which the responding unit is a master.

15. A method according to claim 3 wherein the responding unit is a slave in a piconet, characterised in that the first unit sends a PAGE to the slave indicating the first unit intent to retrieve the at least one address (BD_ADDR) for the at least one master for the slave and the slave sending a PAGE RESPONSE message containing the requested at least one BD_ADDR.

16. A method according to claim 15, characterised in that the PAGE RESPONSE includes at least one current clock value of said at least one master units of the responding unit.

17. A method according to claim 15 or 16, characterised in that the PAGE RESPONSE further includes information as to at least one of the following: whether the responding unit is connected to at least one of said at least one piconet, whether the responding unit is a slave in at least one of said at least one piconet, whether the responding unit prefers to be a master or a slave after a subsequent PAGE procedure, the number of slaves in at least one of said at least one piconet, the BD_ADDR(s) of at least one master unit of said at least one piconet where the responding unit is a slave member, the clock value(s) of at least one master unit of said at least one piconet where the responding unit is a slave member, inter-piconet scheduling parameters of at least one Bluetooth that is connected to at least two piconets, the battery status of the responding unit, traffic parameters in at least one of the piconets or priority parameters.

18. A method according to claim 3, characterised in that the INQUIRY message contains a Dedicated Inquiry Access Code which is dedicated to, and will only be responded to, by one of the following:

- a unit being a slave unit in one and only one piconet,

- a unit being a slave unit in at least one piconet,

- a unit being a slave unit in more than one piconet,

- a unit being a slave unit in one or more piconets, but a master unit in none,

- a unit being a slave unit in one or more piconets and a master unit in one piconet,

5 - a unit being a master unit in one piconet, but a slave unit in none,

- a unit that is not connected to any piconet,

- a unit with low current traffic load, or

- a unit with high current traffic load.

19. A method according to claim 18, characterised in that the INQUIRY message
10 contains a Dedicated Inquiry Access Code (DIAC) which is only responded to by master units.

20. A method according to claim 1 in the case where the units are adapted to communicate with other according to the Bluetooth specification and the ad hoc network comprises at least one piconet formed according to the Bluetooth specification, the roles
15 of the units in the ad hod network comprising master and slave, **characterized in** that in the establishment of contact, the first unit sends at least one INQUIRY message and said at least one unit responds by sending an INQUIRY RESPONSE message comprising a Frequency Hop Synchronisation packet, the INQUIRY message containing a Dedicated Inquiry Access Code which is only responded to by units having the role of master.

20 21. A method according to claim 1 in the case where the units are adapted to communicate with other according to the Bluetooth specification and the ad hoc network comprises at least one piconet formed according to the Bluetooth specification, the roles of the units in the ad hod network comprising master and slave, **characterized in** that in the establishment of contact, the first unit sends at least one INQUIRY message and said
25 at least one unit responds by sending an INQUIRY RESPONSE message comprising a Frequency Hop Synchronisation packet, the INQUIRY message containing a Dedicated Inquiry Access Code (DIAC) which is dedicated to, and is only be responded to, by one of the following:

- a unit being a slave unit in one and only one piconet,

30 - a unit being a slave unit in at least one piconet.

- a unit being a slave unit in more than one piconet,

- a unit being a slave unit in one or more piconets, but a master unit in none,

- a unit being a slave unit in one or more piconets and a master unit in one piconet,

- a unit being a master unit in one piconet, but a slave unit in none,

35 - a unit that is not connected to any piconet,

- a unit with low current traffic load, or

- a unit with high current traffic load.

22. A method according to claim 21, characterised in that the INQUIRY message contains a Dedicated Inquiry Access Code (DIAC) which is only responded to by master
40 units.

23. A method for connecting a first unit to an ad hoc network comprising at least two units, units connected in the ad hoc network having different roles, the method comprising the steps of:
- the first unit establishing contact with at least one of the units of the ad hoc network, and
- the first unit thereafter connecting to said at least one unit, the first unit thereby becoming connected to the ad hoc network,

characterized in that in the step of connecting, the first unit chooses or determines the roles of itself and of said at least one unit in the ad hoc network formed after the first unit becoming connected.

24. A method according to claim 23, **characterized in** that in the step of establishing contact, the at least one unit sends information to the first unit, the information including an indication of the role of said at least one unit in the ad hoc network, and that in the step of connecting, the first unit chooses determines the roles based on the indication of the role of said at least one unit.

25. A method according to claim 23 in the case where the units are adapted to communicate with other according to the Bluetooth specification and the ad hoc network comprises at least one piconet formed according to the Bluetooth specification, the roles of the units in the ad hoc network comprising master and slave and said at least one unit having the role of master, **characterized in** that in the step of connecting, a PAGE message is sent from the first unit to said at least one unit, thereafter a PAGE RESPONSE message is sent from said at least one unit to the first unit, and finally a Frequency Hop Synchronisation packet is sent from the first unit to said at least one unit, the FHS packet including an indication that the first unit has determined to reverse the paging direction from said at least one unit to the first unit.

26. A method according to claim 25, characterised in that the reversal is performed by terminating the current PAGE procedure and initiating a new PAGE procedure from the master to the first unit.

27. A method according to claim 25, characterised in that the reversal is performed by the master Bluetooth which receives the request for reversal sending an FHS packet to the first unit with all FHS parameters set as if the sender is the paging unit and the first unit responding with a packet including only the first unit DAC, thereby concluding the reversed page procedure.

28. A method according to claim 25 where the paged unit does not accept the reversal of paging direction, characterised in that the paged unit responding to the FHS packet with a second FHS packet including the same indication of request for reversal of paging direction and the first unit receiving this second FHS packet choosing to either proceed with the PAGE procedure without reversing or abandoning the PAGE procedure.

29. A method according to claim 28, characterised in that if the first unit chooses to proceed with the PAGE procedure it proceeds by restarting the PAGE procedure by

sending a new initial PAGE message.

30. A method according to claim 28, characterised in that if the first unit chooses to proceed with the PAGE procedure it proceeds by sending a third FHS message without an indication of request for reversal of paging direction.

5 31. A computer program product directly loadable into the internal memory of a digital computer. comprising software code portions for performing the steps of the methods of or the methods performed by any block or device according to any of the preceding claims when the product is run on a computer.

32. A computer program product stored on a computer usable medium, comprising 10 readable program means for causing a computer to control the execution of the steps of the methods performed by any block or device according to any of the preceding claims.